REMARKS

This responds to the Office Action dated December 19, 2005. No claims are amended, cancelled, or added. As a result, claims 1-30 remain pending in this patent application.

§102 Rejection of the Claims

Claims 1, 3, 16 and 30 were rejected under 35 U.S.C. § 102(b) for anticipation by Kroll et al. (U.S. Patent No. 5,904,705). Applicant respectfully traverses.

Applicant cannot find in the cited portions of Kroll any disclosure of, among other things, drawing a substantially constant first current pulse from an energy storage cell during a first time period between a starting time and an ending time, measuring a first change of a terminal voltage across the cell "during the first time period," (e.g., where the substantially constant first current pulse is being drawn during the first time period, as defined by the language in claim 1), and then comparing the measured first change to first stored data to determine the energy remaining in the cell, as recited or incorporated in claims 1, 3, 16, and 30.

The Office Action apparently relies on FIGS. 4 and 5 of Kroll and accompanying description at column 4, line 5 of Kroll. (*See* Office Action ¶4.) Applicant respectfully submits, however, that FIG. 4 of Kroll apparently does not show measuring a "change" in terminal voltage during a first time period in which a substantially constant current pulse is being drawn. In FIG. 4 of Kroll, line 37 apparently indicates open circuit voltage of the battery cell (*see* Kroll at col. 4, liens 8-11), while line 38 apparently indicates a "minimum voltage of the fourth pulse train of the four-pulse sequence." (*See id.* at col. 4, lines 17-20). Applicant respectfully submits that Kroll's depiction of an open-circuit voltage and a loaded voltage do not constitute measuring a "change" in terminal voltage during a time period in which a cell is loaded by a substantially constant current pulse—to measure such a "change," at least two voltage measurements would have to be made during the time period in which the cell is loaded by a substantially constant current pulse. However, the data points of line 38 of Kroll show only a single voltage, that is "the minimum voltage of the fourth pulse train of the four pulse sequence." (*See* Kroll at col. 4, lines 17-19). By contrast, FIGS. 3-5 of the present patent application illustrate an example in which a "change" in terminal voltage is measured during a substantially constant first current pulse, such as at times t4 and t2, for example.

Moreover, because Kroll apparently fails to show measuring a first "change" of a terminal voltage across the cell during the first time period (during which a substantially constant first current pulse is being drawn), it necessarily also fails to disclose comparing the measured first "change" to first stored data to determine the energy remaining in the cell.

In sum, because Kroll apparently fails to show all elements recited or incorporated in claims 1, 3, 16, and 30, Applicant respectfully submits that there is no *prima facie* case of anticipation for these claims. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of these claims.

§103 Rejection of the Claims

1. Claims 2 and 15 were rejected under 35 U.S.C. § 103(a) as being over Kroll et al. (U.S. Patent No. 5,904,705) in view of WO 9402202.

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll and/or WO 9402202 all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Moreover, Applicant respectfully submits that merely because WO 9402202 mentions manganese dioxide does not make obvious a particular technique of determining battery life, since different battery chemistries result in different battery characteristics, which, in turn, constrain the battery life determination in different ways. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 2 and 15.

2. Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705).

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 4 and 5.

3. Claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705) as discussed above.

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll all elements recited or incorporated

in these claims, for the reasons discussed above with respect to the § 102 rejection. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 6 and 7.

4. Claims 8 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705) as discussed above, in view of "Handbook of Batteries" by David Linden.

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll and/or Linden all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Moreover, although the cited portion of Linden apparently does mention a polarization, in FIG. 2.1, the disclosed graph of FIG. 2.1 shows cell voltage vs. current, instead of voltage vs. time. By contrast, claim 8 recites "measuring the first change," which, when read together with the incorporated language from claim 1, refers to the first change in terminal voltage during a time period in which a substantially constant first current pulse is being drawn—the recited polarization angle (see, e.g., θ_1 and θ_2 of FIGS. 4 and 5 of the present application) further defines a particular technique of measuring such a change in terminal voltage. Therefore, Applicant respectfully submits that FIG. 2.1 of Linden cannot be reasonably read onto the recited polarization angle of claims 8 and 17. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 8 and 17.

5. Claims 10-12, 18 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705), in view of Traub (U.S. Patent No. 6,696,842).

Concerning claim 10:

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll and/or Traub all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Moreover, although the cited portion of Traub apparently does mention measuring a quiescent voltage, it does not use the measured quiescent voltage to distinguish between two different stored capacity values, much less two different stored capacity values that correspond to the single "change" in terminal voltage, as recited in claim 10. Instead, Traub apparently uses the quiescent voltage measurement to distinguish between a "poor charging condition" and a "high wear." Traub's poor charging condition apparently relates to the rotational speed of an internal-

combustion engine, rather than to battery capacity. Moreover, other than the fact that both Traub and Kroll use batteries, Applicant respectfully submits that nothing in the automotive internal combustion engine application of Traub would motivate one of ordinary skill in the art to combine it with the implantable medical device application of Kroll. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 10.

Concerning claim 11-12 and 18-19:

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll and/or Traub all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Moreover, although the cited portion of Traub apparently does mention measuring a quiescent voltage, it does not use the measured quiescent voltage to determine the energy remaining in the cell, as similarly recited or incorporated in claims 11-12 and 18-19 Instead, Traub apparently merely determines "whether the battery voltage during the [auto engine] starting condition was too low because of its wear or whether its charging condition (determined from rotational speed of the engine) was insufficient." Moreover, other than the fact that both Traub and Kroll use batteries, Applicant respectfully submits that nothing in the automotive internal combustion engine application of Traub would motivate one of ordinary skill in the art to combine it with the implantable medical device application of Kroll. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 11-12 and 18-19.

6. Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705) as discussed above.

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Moreover, claim 13 additionally recites comparing the first and second measured "changes" in terminal voltages across a cell, during time periods when a substantially constant current is being drawn—but Kroll does not even disclose measuring a single such change, as discussed above with respect to the § 102 rejection. It necessarily follows, therefore, that Kroll further fails to show comparing such first and second "changes" to distinguish between two different stored capacity values that correspond to a single change in the terminal voltage across the cell, as

recited in claim 13. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 13.

7. Claims 20 and 22-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705) as discussed above in view of Barreras et al. (U.S. Patent No. 4,556,061).

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll and or Barreras all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Like the method claims discussed above with respect to the § 102 rejection, independent system claim 20 recites a difference circuit that computes a difference between first and second voltages measured during a substantially constant first current pulse. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claims 20 and 22-29.

8. Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll et al. (U.S. Patent No. 5,904,705) and Barreras et al. (U.S. Patent No. 4,556,061) as discussed above, in view of WO 9402202.

Applicant respectfully traverses, on the grounds that no *prima facie* case of obviousness has been established, because Applicant cannot find in Kroll, Barreras, and/or WO 9402202 all elements recited or incorporated in these claims, for the reasons discussed above with respect to the § 102 rejection. Moreover, Applicant respectfully submits that merely because WO 9402202 mentions manganese dioxide does not make obvious a particular technique of determining battery life, since different battery chemistries result in different battery characteristics, which, in turn, constrain the battery life determination in different ways. Accordingly, Applicant respectfully requests withdrawal of this basis of rejection of claim 21.

Allowable Subject Matter

Claim 9 was indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Nonetheless, for the reasons discussed above, Applicant respectfully submits that claim 9 is allowable in its present form. Accordingly, Applicant respectfully requests allowance of claim 9.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date February 21, 2006

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned **hereby certifies that this** correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 21 day of February, 2006.

Paula Sucha
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Signature